

Extra Feed Needed in Colder Weather

Livestock may need extra feed in colder weather to keep warm.

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While the weather outside isn't frightful yet, livestock producers still need to be thinking now about how they'll keep their animals warm when the temperatures

drop, wind chills rise and it starts to snow, snow, snow.

Colder winter weather means producers need to be aware of increased

livestock energy requirements to ensure their animals are able to withstand harsh conditions outdoors, said Rory Lewandowski, an Ohio State University (OSU) Extension agriculture and natural resources educator.

OSU Extension is the outreach arm for Ohio State University's College of Food, Agricultural, and Environmental Sciences.

Cold temperatures, low wind chills and muddy conditions can significantly increase the energy required by livestock metabolism to provide enough heat for the animal to maintain its body temperature, Lewandowski said.

"Now is the time of year to start getting prepared for the harsher winter conditions," he said. "Producers with beef cattle operations, sheep and goats will want to start paying attention to weather reports now and taking a look at the quality of the feedstuff they have, and what they plan to feed their animals later."

While the extreme cold winter weather isn't upon the region yet, cold rains are also a concern for animals that have hair coats, Lewandowski said.

"Rain in 40° (F) temperatures can be tougher on animals with a hair coat than cold conditions of 10° on a dry day," he said. "When the animal's hair coat is wet, it loses its insulation ability.

"At that point, the animal needs increased energy to stay warm."

Producers can start to prepare for cold spells by doing a good analysis on their hay quality, Lewandowski said, because if conditions get too cold, it's likely that some of those hay crops won't provide as much energy to the animal. At that point, producers will have to supplement the animals' feed, he said.

Ohio's weather rarely reaches the kinds of extreme temperatures or conditions where producers have to provide indoor shelter or supplement heat for livestock, Lewandowski said. Producers still need to evaluate their



animals' body condition and whether the herd can go through adverse climate, he said.

"Livestock generally are given a body condition score on a scale of 1 to 9, where 1 is an emaciated animal with skin and bones and 9 rated as obese," Lewandowski said. "We typically want to see cattle in a 5 to 6 body condition score going into winter.

"Livestock in good body condition can call on fat reserves, but if they are in colder temperatures for longer periods, they need the increased energy content in rations to help them alleviate cold stress," he continues.

Animals have a thermoneutral zone — a temperature range in which the animal is most comfortable, is not under any temperature stress, and is considered optimum for body maintenance, health and animal performance. When livestock experience cold stress below the lower boundary of that zone, they reach lower critical temperature (LCT), and the animal's metabolism must increase in order for it to keep warm, he said.

"An increase in the metabolism of the animal, generally by shivering, in order to maintain body temperature is one method of how it deals with cold stress," Lewandowski said. "In order for the animal to do this, it requires more energy either from stored fat or more energy intake in the animal's diet.

"Generally, energy intake must increase by 1% for each degree of cold below the LCT."

The LCT is influenced by an animal's size, age, breed, nutrition, housing conditions, and hair coat or wool thickness. The thicker the hair coat or wool, the more the LCT decreases, he said.

However, Lewandowski cautioned, with a wet hair coat, the LCT increases to 59° for cattle, horses and goats regardless of how heavy their hair coat is because hair coats lose their ability to insulate when wet. Sheep wool, however, is able to shed water, he said.

The LCT for beef cattle, dependent upon the development of the hair coat, is:

- Summer or wet: 59°
- Fall: 45°
- Winter average hair coat: 32°
- Winter heavy hair coat: 18°

Another measure producers can take to care for livestock in harsh winter weather is to ensure the animals are blocked from the direct force of the wind to help protect them from wind chill, Lewandowski said.

"Wind chill has a harsh effect on animals, so anything producers can do to protect the animals from the wind is a good idea," he said.

Producers whose animals don't have

regular access to a barn can:

- Provide windbreak protection to reduce the effects of wind chill on energy requirements.
- Increase access to better-quality forage. Livestock can increase intake to some extent under cold conditions and if forage is of good quality, then energy intake is also increased. With poorer-quality forages, grinding to decrease

particle size can allow more intake and increase digestibility.

- Limit-feeding of corn, or use of a high-energy, non-starch feedstuff.
- Move livestock out of muddy conditions or take steps to reduce the mud by using a feeding pad.



Editor's Note: Tracy Turner is the technical editor for OSU Extension.



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